

WHAT IS CLAIMED IS:

1. A cellular data packet, comprising:
 - a preamble for collision determination and synchronization;
 - a start-of-frame delimiter (SFD);
 - 5 a destination address (DA);
 - a source address (SA);
 - a routing information block (RIB); and
 - an informational field.
2. The cellular data packet of claim 1, wherein said informational field
 - 10 comprises:
 - a type field for indicating whether said packet is a control packet or a service packet;
 - a status field;
 - a data field; and
 - 15 a cyclic redundancy check (CRC) field, including error detection and correction information.
3. The cellular data packet of claim 2, wherein said type field comprises:
 - a two-byte protocol identifier;
 - a two-byte sub-protocol identifier; and
 - 20 a two-byte service identifier.
4. The cellular data packet of claim 2, wherein said status field is configured to indicate whether said packet is an ACK or a NACK packet, the number of data packets pending, spread spectrum synchronization information, or whether said packet is native or routed.
- 25 5. The cellular data packet of claim 1, wherein said destination address comprises:
 - a region indicator for indicating a region location of a recipient user station;
 - a cell identifier for indicating a cell within said region; and
 - a cellular IP address of said recipient user station within said cell.
- 30 6. The cellular data packet of claim 1, wherein said source address comprises:
 - a region indicator for indicating a region location of a transmitting user station;
 - a cell identifier for indicating a cell within said region; and
 - a cellular IP address of said transmitting user station within said cell.

a plurality of user transmission/receiving stations located within each of said plurality of cells within said network, each of said user transmission/receiving stations

associated with a respective frequency hop number, wherein said
transmission/receiving stations are configured to actively transmit/receive data packets
if said associated frequency hop number is determined to be available, and wherein
each of said user transmission/receiving stations within a respective one of said
5 plurality of cells remain synchronized to said base station based upon said periodic
synchronization burst.

15. The cellular network of claim 14, wherein the common timing reference is
determined from a global positioning satellite.

16. An cellular modem, comprising:
10 a radio frequency unit for transmitting/receiving data packets; and
a baseband-to-intermediate frequency conversion unit, having a cellular
network routing engine based on cellular IP, configured to covert the baseband
information from a computer into intermediate frequency information for processing by
said radio frequency unit;
15 wherein said modem is configured to serve as a router within said cellular
network.

17. The cellular modem of claim 16, wherein said radio frequency unit is
configured to operate in the MMDS, LMDS, ISM, ITFS and MDS spectrums.

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